

Work Order ID 73129

Friday, August 26, 2011 6:32:39 AM



Page 1

Item ID: D206-642-541

Accept



Setup Start



Revision ID:

Item Name: Replacement Skidtube

Stop



Start Date: 8/26/2011 Start Qty: 1.00



Cust Item ID:

Required Date: 9/9/2011 Req'd Qty: 1.00



Customer:

Reference:

Approvals: Process Plan: *MLF* Date: *11-08-29*

Tooling:

Date:

Run Start



QC: Date: SPC (Y/N):

Date:

Stop



| Sequence ID/ Work Center ID | Operation Description | Set Up/ Run Hours | Tool ID | Tool # | Plan Code | Accept Qty | Reject Qty | Reject Number | Insp. Stamp |
|--------------------------------|--------------------------|----------------------|---------|--------|--------------|---------------|---------------|------------------|----------------|
|--------------------------------|--------------------------|----------------------|---------|--------|--------------|---------------|---------------|------------------|----------------|

| | |
|--------------|--------------|
| Draw Nbr | Revision Nbr |
| D3274 | D |
| IIN-D206-642 | Rev M |

100

0.00



DOCUMENT CONTROL

DC

0.00

Document Control

Memo

Photocopy bluefile & type labels per PPP D206-642-541

CHG003

N/A

| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
| | | | | | | | |
| | | | | | | | |

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

| NCR: | | WORK ORDER NON-CONFORMANCE (NCR) | | | | | | |
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NOTE: Date & initial all entries

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Run Start



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop



Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

110

0.00



Skidtubes

Skidtubes

0.00

Skidtubes

Memo

****VERIFY AND INSPECT THE MATERIAL PRIOR TO USE****

1- Bend FWD end of tube using bend prog D3274 FWD and foil 10 as per dwg D3274, cut fwd end of tube with saw table setup D3274.

2- remove fwd indexing ridge as per dwg D3274. Prepare for welding

3- weld fwd cap as per dwg D3274 and OSI004

AR Aluminum Rod Batch: *m112860*

4- grind fwd cap weld on top surface only

5- Cut AFT end of tube at 170.9" as per dwg D3274 and deburr end.

6-Drill Aft cap pilot hole using DT8025

7 -Cleco DT8025 in position and install pilot hole drill Jig DT8742A,B,C,D. Drill 3/16" pilot holes as per Dwg D3274

8 -Remove inner indexing ridge on aft end of skidtube as per Dwg D3274 scribe batch #

9 -Open aft end cap holes to Ø0.208" as per Dwg D3274. Deburr aft end.

DP

11-9-14

SL 11/09/15

BE 11/09/15

BE 11/09/15

DL 11/09/15

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Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

114

QC5- Inspect part completeness to step on W/O

0.00



QC

Memo

0.00

8/26/11

Quality Control

116

QC10- Inspect visual per QSI004- ground welds

0.00



QC

Memo

0.00

8/26/11

H

Quality Control

120

Chemical Conversion Coat per QSI005 4.1

0.00



HandFinish

Memo

0.00

TW

11-09-20

Hand Finishing

| W/O: | | WORK ORDER CHANGES | | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|--|
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Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop



Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool # Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

130



QC3- Inspect Part Finish

0.00

QC

Memo

0.00

Quality Control

DP

11-9-20

150



Skidtubes

0.00

Skidtubes

Memo

0.00

Skidtubes

1-Open Ø0.313" and 0.375" crossbolt spacer holes as per Dwg D3274

2-Deburr crossbolt spacer holes as per Dwg D3274 and blow out chips from inside the tube

3-Bond web in place as per Dwg D3274 & QSI 015.

A/R ☐ Sikaflex-291 ☒ *118573* ☐

Sikaflex expire date: ☐ *12/04/05* ☐

Start: ☒ *11/09/20* Time: ☐ *2:15* ☐

Finish: ☐ Time: ☐

(Adhere for 12 hours)

Wh. 11/09/20

BB

11/09/20

| W/O: | | WORK ORDER CHANGES | | | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|--|--|
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Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop



Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

160



QC

Quality Control

QC5- Inspect part completeness to step on W/O

0.00

Memo

0.00



11-9-22

170



Skidtubes

Skidtubes

Skidtubes

Memo

0.00

0.00

1-Bend AFT end of tube using bend prog. D3274 AFT as per dwg D3274. Install drop pins in crossbolt spacer holes to maintain web position.

3A0 11-09-22

2- DRILL PILOT HOLES FOR WEARPLATES USING D3274-1T2
OPEN HOLES TO .297" . Deburr

3-DRILL TOE PIN HOLE .640" DIA AS PER DWG USING DT8935 FWD
END OF TUBE
DEBURR INSIDE OF HOLE AS NECESSARY (DO NOT ENLARGE HOLES)
REMOVE ANY FOREIGN OBJECTS INSIDE OF TUBES



11-09-23

4- Countersink crossbolt spacer holes as per Dwg D3274

5- prepare for welding

| W/O: | | WORK ORDER CHANGES | | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|--|
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Cust Item ID:

Required Date: 9/9/2011 Req'd Qty: 1.00



Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

180



QC

Quality Control

QC5- Inspect part completeness to step on W/O

0.00

11-9-27

Memo

0.00

190



Skidtubes

Skidtubes

Skidtubes

Memo

1-Insert D2649 & D3275-1 crossbolt spacers. Weld as per QSI 004 and Dwg D3274. Remember to back drill each hole before welding the other side. Use aluminum rod

A/R ☐ Aluminum Rod ☒ 117884

3-Grind cross bolt welds flush as per Dwg D3274.

4-Counterbore 5/16" x 0.750" deep as per Dwg D3274 and deburr.

0.00

0.00

11-08-27

11-9-27

| W/O: | | WORK ORDER CHANGES | | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|--|
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Work Order ID 73129

Friday, August 26, 2011 6:32:39 AM



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Item ID: D206-642-541

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Start Date: 8/26/2011 Start Qty: 1.00



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Required Date: 9/9/2011 Req'd Qty: 1.00



Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

200

QC5- Inspect part completeness to step on W/O

0.00



QC

Memo

0.00

Quality Control

8/26/2011

210

QC10- Inspect visual per QSI004- ground welds

0.00



QC

Memo

0.00

Quality Control

8/26/2011

220

Pressure Wash per QSI005 4.3

0.00



HandFinish

Memo

0.00

Hand Finishing

Re-alodine tube as per QSI 005 section 4.1.2.1 do not acid etch

1 BL 11-9-28.

| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
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Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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Work Order ID 73129

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Item ID: D206-642-541

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Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

230



Powdercoat

White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum

0.00

Memo

START TIME:

OVEN TEMPERATURE:

FINISH TIME:

10:00
320 OF
10:30

1 X of M-L 11/09/28

240



QC

QC3- Inspect Part Finish

0.00

Memo

0.00

1 of M 11/09/28

250



HandFinish

HandFinishing

0.00

Memo

0.00

1-Install Nut Plate as per Dwg D3274. Apply LPS-3 to Nut Plate and rivets.

A/R ☐ LPS-3 ☒ M118393

2-Install inserts as per Dwg D3274. Use a drop of Sikaflex inside insert holes a

A/R ☐ Sikaflex-291 ☒ M118393Sikaflex expire date: ☐ 15/07

1 of M 11/09/28

| W/O: | | WORK ORDER CHANGES | | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|--|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector | |
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Work Order ID 73129

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Run Start



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop



Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

260

QC5- Inspect part completeness to step on W/O

0.00



QC

Memo

0.00

Quality Control

Inspect Nut Plate & Inserts

11 09 28 (1)

270

HAND FINISHING RESOURCE #1

0.00



HandFinish

Memo

0.00

Hand Finishing

1-Install wearpads & gaskets as per Dwg D3274.

2-Install ring as per Dwg D3274

A/R ☐ Sikaflex-291 ☐ 1118393

Sikaflex expire date: ☐ 12-05

3-Inspect for foreign objects as per QSI 024

4-Spray inside of tube on both sides of web with LPS-3

A/R LPS-3 Batch: N/A

5-Install Aft Cap and seal with Sikaflex. Clean excess adhesive.

A/R ☐ Sikaflex-291 ☐ 1118393

Sikaflex expire date: ☐ 12/05

1 of 11/09/28

| W/O: | | WORK ORDER CHANGES | | | | | | |
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Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

280

QC5- Inspect part completeness to step on W/O

0.00



QC

Memo

0.00

Sulotke

X0

Quality Control

290

Identify as per dwg & Stock Location: _____

0.00



Packaging

Memo

0.00

Packaging

PP 72956

11/9/2011

300

QC21- Final Inspection - Work Order Release

0.00



QC

Memo

0.00

Quality Control

11/9/300

mf 11-09-29

| W/O: | | WORK ORDER CHANGES | | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|--|
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NOTE: Date & initial all entries

Picklist Print

Friday, August 26, 2011 6:32:35 AM

Page 1

Work Order ID: 73129

Parent Item: D206-642-541

Parent Item Name: Replacement Skidtube

Start Date: 8/26/2011

Required Date: 9/9/2011

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP Rev:B 05.09.23 Revised per D206-642 Rev. J KJ/JLM
IPP Rev:C 07-02-23 Added SS Wearplates & Gaskets JLM
IPP Rev:D 07-12-06 replace NAS1515H3L to D3672-1 DD
IPP Rev:E 08-04-17 as per PAR 08-015 DD verified by:EC
IPP Rev:F 08-06-02 add comment DD verified by:EC
IPP Rev:G 08-10-09 revise details DD verified by:EC

| Component Item ID/ Item Name | Replacement Item ID | Mfg/ Purch | Bin Item | Primary Location | Last Location | Route Seq ID | Unit of Measure | Qty on Hand | Qty per Kit | Total Qty | Qty Issued | Date Issued | Status |
|---------------------------------|------------------------|---------------|-------------|---------------------|------------------|-----------------|--------------------|----------------|-------------|--------------|---------------|----------------|--------|
|---------------------------------|------------------------|---------------|-------------|---------------------|------------------|-----------------|--------------------|----------------|-------------|--------------|---------------|----------------|--------|

D2600-1-190

Manufactured

No

110

Each

81.4000

1

1



Extrusion Round 3" 206

Location

Loc Qty

Loc Code

HALL

81.4

59874

22.4

69622

59

① 11-9-14

D3285-1

Manufactured

No

110

Each

92.0000

1

1



Cap

Location

Loc Qty

Loc Code

LG002

92

52511

45

52647

47

✓

D3282-041

Manufactured

No

150

Each

2.0000

1

1



Float Web (206L/407)

Location

Loc Qty

Loc Code

LG

70650

2

69714

2

De
4/09/20

| W/O: | | WORK ORDER CHANGES | | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|--|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector | |
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Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

| NCR: | | WORK ORDER NON-CONFORMANCE (NCR) | | | | | | |
|------|------|----------------------------------|-----------------------------|---------------------------------|----------------|---------------------------|-----------------------|--------------------------|
| DATE | STEP | Description of NC Section A | Corrective Action Section B | | | Verification Section C | Approval Chief Eng | Approval QC Inspector |
| | | | Initial Chief Eng | Action Description Chief Eng | Sign & Date | | | |
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NOTE: Date & initial all entries

Picklist Print

Friday, August 26, 2011 6:32:35 AM

Page 2

Work Order ID: 73129



Parent Item: D206-642-541



Parent Item Name: Replacement Skidtube

Start Date: 8/26/2011

Required Date: 9/9/2011

Start Qty: 1.00

Required Qty: 1.00

D2649

Manufactured No

190

Each

46.0000

12

12



Cross Bolt Spacer



11.09.27

Location

Loc Qty

Loc Code

LG

B73390

34

68224

2

71355

2

72704

30

LG001

12

65317

1

68507

11

12

D3275-I

Manufactured No

190

Each

280.0000

12

12



Crossbolt Spacer



11.09.27

Location

Loc Qty

Loc Code

LG

161

72123

161

LG002

119

66930

106

68946

13

12

CR3212-4-03

Purchased No

250

Each

1,158.000

2

2



Cherry Rivet



11.09.28

Location

Loc Qty

Loc Code

FP-B

2

110139

2

ST311

1156

114859

1156

12

| W/O: | | WORK ORDER CHANGES | | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|--|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector | |
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Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

| NCR: | | WORK ORDER NON-CONFORMANCE (NCR) | | | | | | |
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| DATE | STEP | Description of NC Section A | Corrective Action Section B | | | Verification Section C | Approval Chief Eng | Approval QC Inspector |
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NOTE: Date & initial all entries

Picklist Print

Friday, August 26, 2011 6:32:35 AM

Page 3

Work Order ID: 73129

Parent Item: D206-642-541

Parent Item Name: Replacement Skidtube

Start Date: 8/26/2011

Required Date: 9/9/2011

Start Qty: 1.00

Required Qty: 1.00

D3415-041

Manufactured No

250

Each

50.0000

1

1



Nut Plate

u/09/28

Location

Loc Qty

Loc Code

ST053

50

33842

6

67605

44

CCR264SS3-3

Purchased

No

250

Each

459.0000

2

2



Cherry Rivet

u/09/28

Location

Loc Qty

Loc Code

FP-B

2

113973

2

ST311

457

117086

31

117849

426

ALS4-1032-130

Purchased

No

250

Each

1,416.000

78

78



Insert

u/09/28

Location

Loc Qty

Loc Code

ST281

370

118386

370

ST282

1046

117717

54

118237

736

118312

256

x78

| W/O: | | WORK ORDER CHANGES | | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|--|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector | |
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Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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NOTE: Date & initial all entries

Picklist Print

Friday, August 26, 2011 6:32:35 AM

Page 4

Work Order ID: 73129

Parent Item: D206-642-541

Parent Item Name: Replacement Skidtube

Start Date: 8/26/2011

Required Date: 9/9/2011

Start Qty: 1.00

Required Qty: 1.00

D3536-15 Manufactured No

270

Each

22.0000

1

1



Gasket



8/26/25

Location

Loc Qty

Loc Code

FP011

22

71586

13

72881

9

25

D3536-23

Manufactured No

270

Each

18.0000

1

1



Gasket



8/26/28

Location

Loc Qty

Loc Code

FP011

18

43406

1

69902

5

71579

12

25

D3536-35

Manufactured No

270

Each

23.0000

1

1



Gasket



8/26/28

Location

Loc Qty

Loc Code

FP012

23

71587

13

72882

10

25

D3536-39

Manufactured No

270

Each

20.0000

1

1



Gasket



8/26/20

Location

Loc Qty

Loc Code

FP015

20

69760

20

25

Friday, August 26, 2011 6:32:36 AM

Shop Packet Print

Page 4

| W/O: | | WORK ORDER CHANGES | | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|--|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector | |
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Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

| NCR: | | WORK ORDER NON-CONFORMANCE (NCR) | | | | | | |
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| | | | Initial Chief Eng | Action Description Chief Eng | Sign & Date | | | |
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NOTE: Date & initial all entries

Picklist Print

Friday, August 26, 2011 6:32:36 AM

Page 5

Work Order ID: 73129



Parent Item: D206-642-541



Parent Item Name: Replacement Skidtube

Start Date: 8/26/2011

Required Date: 9/9/2011

Start Qty: 1.00

Required Qty: 1.00

D3535-15

Wearshoe

Manufactured No

270 Each

9.0000

1

1



xl 11/09/28

Location

Loc Qty

Loc Code

FP018

9

69931

9

xl

D3535-35

Wearshoe

Manufactured No

270 Each

12.0000

1

1



xl 11/09/28

Location

Loc Qty

Loc Code

FP018

12

65926

1

67598

1

70815

10

xl

D3535-39

Wearshoe

Manufactured No

270 Each

19.0000

1

1



xl 11/09/28

Location

Loc Qty

Loc Code

FP018

19

69759

6

72159

13

xl

D3535-23

Wearshoe

Manufactured No

270 Each

18.0000

1

1



xl 11/09/28

Location

Loc Qty

Loc Code

FP021

18

70818

8

71581

10

xl

Friday, August 26, 2011 6:32:36 AM

Shop Packet Print

Page 5

| W/O: | | WORK ORDER CHANGES | | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|--|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector | |
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Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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NOTE: Date & initial all entries

Picklist Print

Friday, August 26, 2011 6:32:36 AM

Page 6

Work Order ID: 73129

Parent Item: D206-642-541

Parent Item Name: Replacement Skidtube

Start Date: 8/26/2011

Required Date: 9/9/2011

Start Qty: 1.00

Required Qty: 1.00

D3537-3 Manufactured No

270

Each

11.0000

1

1



Wearpad



11/09/28

Location

Loc Qty

Loc Code

FP

5

B72149

x1

70481

5

FP017

6

35697

1

72686

5

D3537-1 Manufactured No

270

Each

66.0000

9

9



Wearpad



11/09/28

Location

Loc Qty

Loc Code

FP001

9

69530

9

FP016

50

68944

0

70687

50

FP017

7

69817

5

70686

2

B72124

x9

AN960C10L Purchased No

270

Each

0.0000

80

80



washer

111835



(x80) 11/09/28

AN960C416 Purchased No

270

Each

0.0000

1

1



washer

1117735



(x1) 11/09/28

Friday, August 26, 2011 6:32:36 AM

Shop Packet Print

Page 6

| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
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Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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NOTE: Date & initial all entries

Picklist Print

Friday, August 26, 2011 6:32:36 AM

Page 7

Work Order ID: 73129

Parent Item: D206-642-541

Parent Item Name: Replacement Skidtube

Start Date: 8/26/2011

Required Date: 9/9/2011

Start Qty: 1.00

Required Qty: 1.00

D3672-1

Manufactured No

270 Each

1,180.000 2 2



Phenolic Washer



u109/25

Location

Loc Qty

Loc Code

ST074

1178

64177

182

66821

496

72229

500

ST077

2

52505

2

AN3C4A

Purchased No

270 Each

2,125.000 80 80



u109/25

BOLT

Location

Loc Qty

Loc Code

ST350

2125

117313

2

117688

36

117795

1

117872

22

118012

20

118112

40

118451

1000

118628

1004

M118983

y80

AN4C5A

Purchased No

270 Each

487.0000 1 1



u109/25

BOLT

Location

Loc Qty

Loc Code

FP-B

98

112243

98

ST345

389

112243

389

x1

Friday, August 26, 2011 6:32:36 AM

Shop Packet Print

Page 7

| W/O: | | WORK ORDER CHANGES | | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|--|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector | |
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Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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NOTE: Date & initial all entries

Picklist Print

Friday, August 26, 2011 6:32:36 AM

Work Order ID: 73129



Parent Item: D206-642-541



Parent Item Name: Replacement Skidtube

Start Date: 8/26/2011

Required Date: 9/9/2011

Start Qty: 1.00

Required Qty: 1.00

D2646

Manufactured No

270

Each

93.0000

1

1



Aft Cap



ul u109128

Location

Loc Qty

Loc Code

FP004

46

68280

46

xl

FP006

5

62678

5

FP-4

38

70945

1

71070

37

fp5

4

71038

4

D3413-1

Manufactured No

270

Each

23.0000

1

1



Ring



ul u109128

Location

Loc Qty

Loc Code

ST420

23

66387

1

70773

22

xl

| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
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NOTE: Date & initial all entries

DART

RELEASED

07.02.12

DEO ATTACHED

| | | | |
|-------------------------------|--------------------------------|---|------------------------|
| DESIGN CP | DRAWN BY PH | DART AEROSPACE USA, INC. PORT HADLOCK, WA | |
| CHECKED [Signature] | APPROVED [Signature] | DRAWING NO. D3274 | REV. D SHEET 1 OF 4 |
| DATE 06.12.19 | | TITLE SKIDTUBE ASSEMBLY SCALE NTS | |
| A | 04.03.15 | NEW ISSUE | |
| B | 04.08.09 | MOVE SADDLE HOLE: 42.14 WAS 42.76 | |
| C | 05.03.16 | ADD -043; NEW INSERTS | |
| D | 06.12.19 | NEW INSERTS, SS WEARSHOE + GASKET | |

| Qty -041 | Qty -043 | Part Number | Description |
|-------------|-------------|---------------|---|
| X | | D3274-041 | SKIDTUBE ASSEMBLY |
| | X | D3274-043 | SKIDTUBE ASSEMBLY |
| 1 | 1 | D2600-1-240 | EXTRUSION |
| 1 | 1 | D2646 | AFT CAP |
| 12 | 12 | D2649 | CROSS BOLT SPACER |
| 12 | 37 | D3275-1 | CROSS BOLT SPACER |
| 1 | 1 | D3282-041 | FLOAT WEB |
| 1 | 1 | D3285-1 | CAP |
| 1 | 1 | D3413-1 | RING |
| 1 | 1 | D3415-041 | NUT PLATE |
| 1 | 1 | D3535-15 | WEARSHOE |
| 1 | 1 | D3535-23 | WEARSHOE |
| 1 | 1 | D3535-35 | WEARSHOE |
| 1 | 1 | D3535-39 | WEARSHOE |
| 1 | 1 | D3536-15 | GASKET |
| 1 | 1 | D3536-23 | GASKET |
| 1 | 1 | D3536-35 | GASKET |
| 1 | 1 | D3536-39 | GASKET |
| 9 | 9 | D3537-1 | WEARPAD |
| 1 | 1 | D3537-3 | WEARPAD |
| 78 | 78 | ALS7-1032-130 | INSERT (or AKS4-1032-130, ALS4-1032-130, AELS-1032-130) |
| 80 | 80 | AN3C4A | BOLT |
| 1 | 1 | AN4C5A | BOLT |
| 1 | 1 | AN960C416 | WASHER |
| 80 | 80 | AN960C10L | WASHER |
| 2 | 2 | CCR264SS3-3 | RIVET |
| 2 | 2 | CR3212-4-03 | RIVET |
| 2 | 2 | NAS1515H3L | WASHER |

GENERAL NOTES:

1. TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
2. DAMAGE TOLERANCE ON FWD BEND:
THERE SHOULD BE NO VISIBLE WRINKLES IN THE BEND FROM THE GROUND TO A HEIGHT OF 7 INCHES ABOVE THE GROUND. IT IS ACCEPTABLE TO POLISH OUT GOUGES UP TO 0.020 DEEP IN THE BENT PORTION OF THE TUBE. A MAXIMUM REDUCTION IN DIAMETER OF 0.150" IS ACCEPTABLE IN THE BENT PORTION OF THE TUBE.
3. ALL HOLES DRILLED ON CENTERLINES.
4. BOND D3282-041 FLOAT WEB INTO D3274-1/-3 OUTER TUBE WITH NON-STRUCTURAL SIKAFLEX-241/291 ADHESIVE PER DART QSI 015. ENSURE HOLES LINE-UP.
5. WELDING TO BE DONE PER DART QSI 004.
6. FINISH: - ACID ETCH, ALODINE ASSEMBLY PER DART QSI 005 4.1
- POWDER COAT WHITE (REF. 4.3.5.1) PER DART QSI 005 4.3
7. DRILL Ø0.297 HOLES FOR ALS7-1032-130 INSERTS USING DT3274-1T2 BEFORE FINISH. INSTALL ALS7-1032-130 INSERTS AFTER FINISH. SEAL WEARSHOE BOLTS WITH SIKAFLEX -241/-291.
8. SPRAY INSIDE OF TUBE WITH A COAT OF LPS LABORATORIES "LPS-3" AFTER FINISH AND INSTALLATION OF INSERTS. COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY, CLEAN EXCESS OFF POWDER COATING WITH MEK DEGREASER.

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| W/O: | | WORK ORDER CHANGES | | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|--|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector | |
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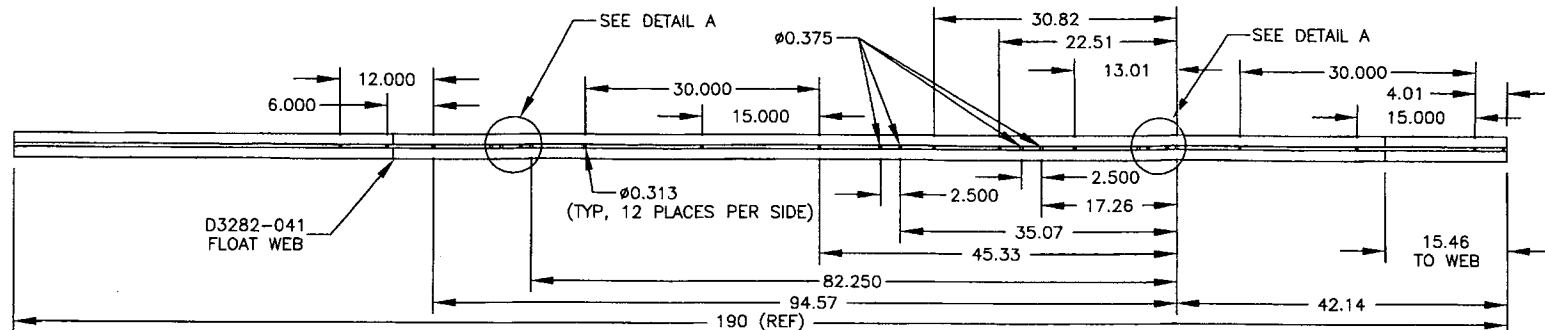
Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

| NCR: | | WORK ORDER NON-CONFORMANCE (NCR) | | | | | | |
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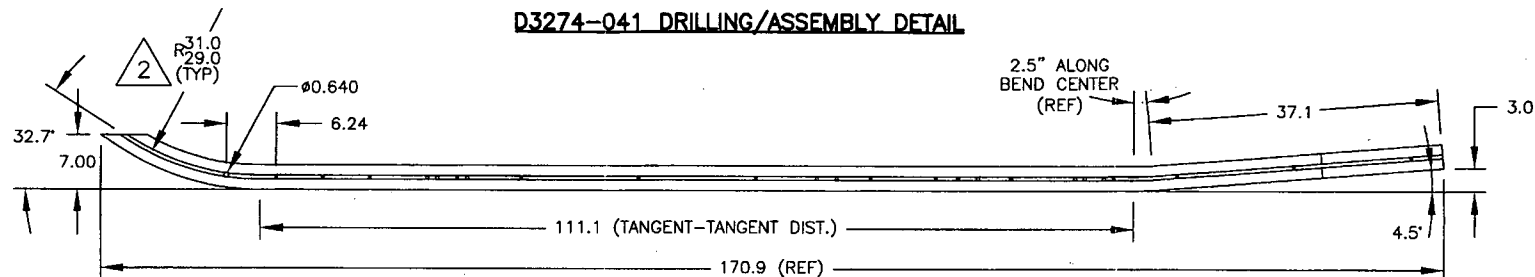
NOTE: Date & initial all entries

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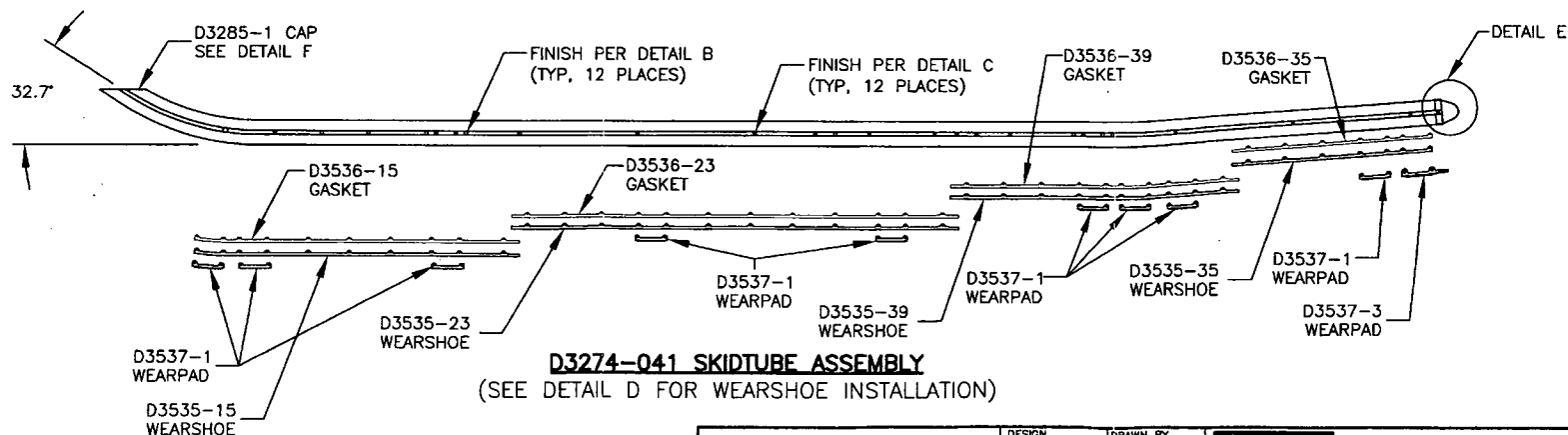


D3274-041 DRILLING/ASSEMBLY DETAIL

6012L#



D3274-041 BEND/DRILLING DETAIL



D3274-041 SKIDTUBE ASSEMBLY
(SEE DETAIL D FOR WEARSHOE INSTALLATION)

RELEASED

07.02.12

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| | | | | |
|---------|----------|----------|-------------------|--|
| DESIGN | CP | DRAWN BY | PH | DART DART AEROSPACE USA, INC. PORT HADLOCK, MA |
| CHECKED | # | APPROVED | # | DRAWING NO. D3274 |
| DATE | 06.12.19 | TITLE | SKIDTUBE ASSEMBLY | REV. D SHEET 2 OF 4 SCALE 1:15 |

| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
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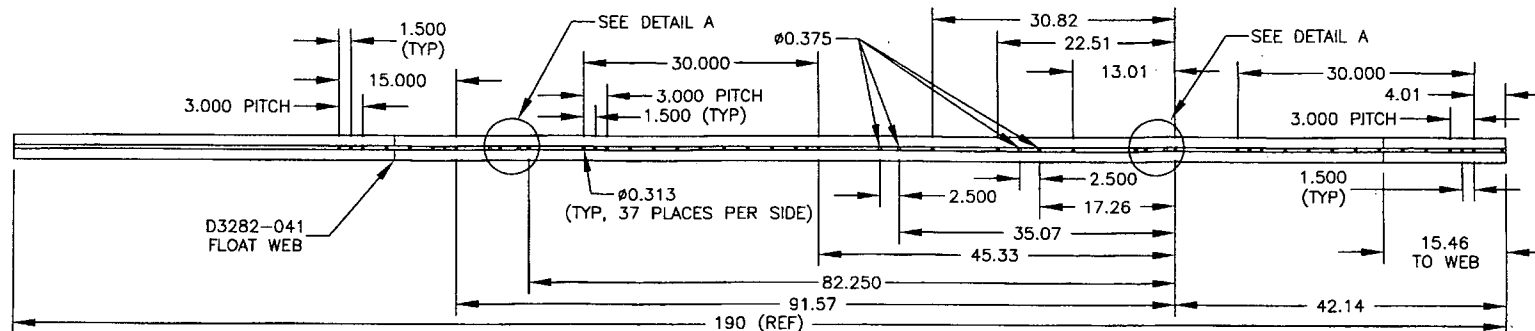
Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

| NCR: | | WORK ORDER NON-CONFORMANCE (NCR) | | | | | | |
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| DATE | STEP | Description of NC Section A | Corrective Action Section B | | | Verification Section C | Approval Chief Eng | Approval QC Inspector |
| | | | Initial Chief Eng | Action Description Chief Eng | Sign & Date | | | |
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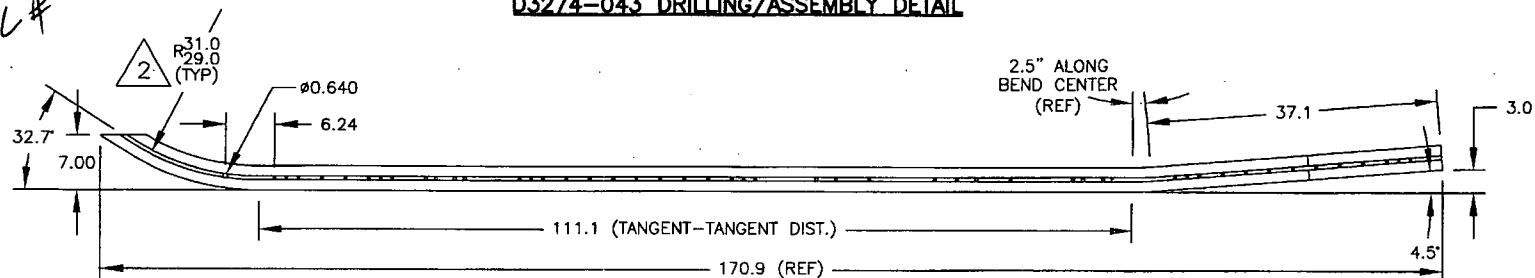
NOTE: Date & initial all entries

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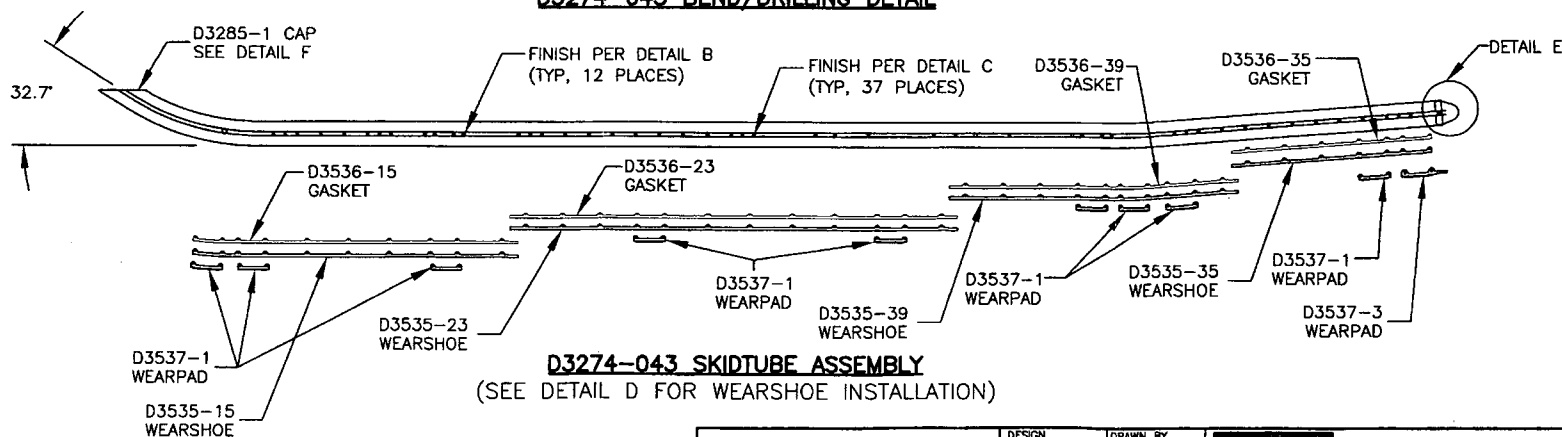


D3274-043 DRILLING/ASSEMBLY DETAIL

60146#



D3274-043 BEND/DRILLING DETAIL



D3274-043 SKIDTUBE ASSEMBLY
(SEE DETAIL D FOR WEARSHOE INSTALLATION)

RELEASED

07.02.12

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|---------|----------|----------|-------------------|--|--------------|
| DESIGN | CP | DRAWN BY | PH | DART DART AEROSPACE USA, INC. PORT HADLOCK, WA | REV. D |
| CHECKED | H | APPROVED | H | DRAWING NO. D3274 | SHEET 3 OF 4 |
| DATE | 06.12.19 | TITLE | SKIDTUBE ASSEMBLY | SCALE | 1:15 |

| W/O: | | WORK ORDER CHANGES | | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|--|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector | |
| | | | | | | | | |
| | | | | | | | | |

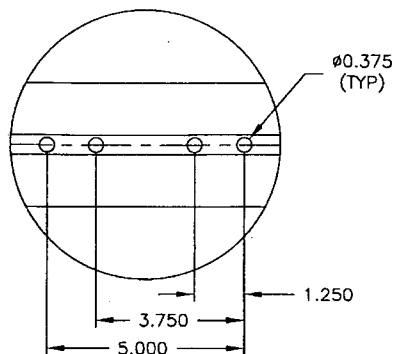
Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

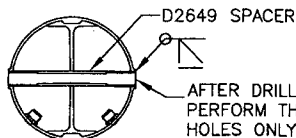
| NCR: | | WORK ORDER NON-CONFORMANCE (NCR) | | | | | | |
|------|------|----------------------------------|-----------------------------|---------------------------------|----------------|---------------------------|-----------------------|--------------------------|
| DATE | STEP | Description of NC Section A | Corrective Action Section B | | | Verification Section C | Approval Chief Eng | Approval QC Inspector |
| | | | Initial Chief Eng | Action Description Chief Eng | Sign & Date | | | |
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NOTE: Date & initial all entries

DETAIL A: DRILL DETAIL

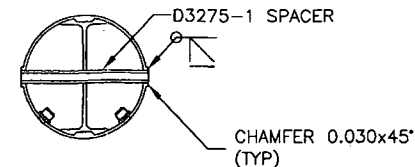


DETAIL B FOR 0.375 HOLES ONLY

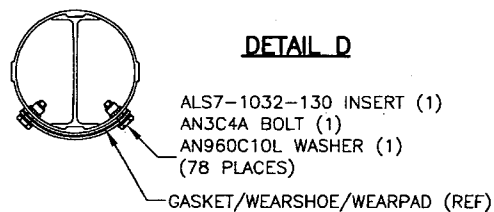


- AFTER DRILLING AND BENDING ASSEMBLY
PERFORM THE FOLLOWING FOR 0.375
HOLES ONLY:
1. CHAMFER HOLE 0.030x45°
 2. INSERT D2649 SPACER
 3. WELD INTO PLACE AND GRIND FLUSH
 4. C'BORE TO 0.313x0.75 DEEP

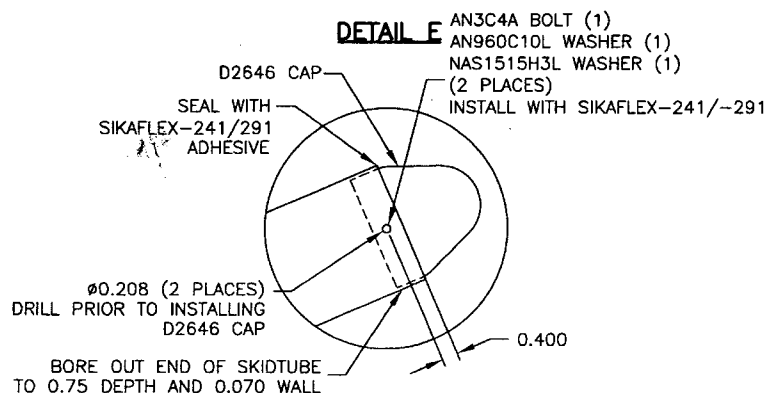
DETAIL C FOR 0.313 HOLES ONLY



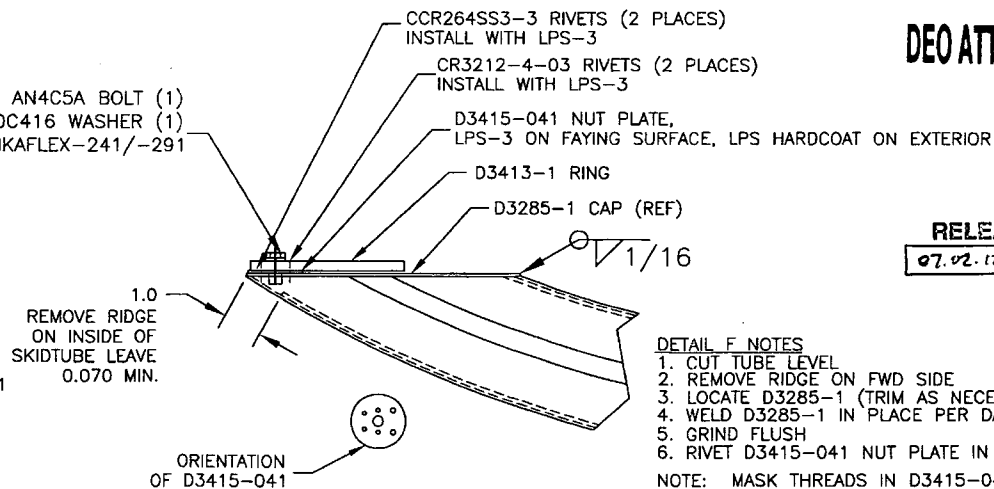
DETAIL D



DETAIL E



DETAIL F: END FINISHING DETAIL



- DETAIL F NOTES**
1. CUT TUBE LEVEL
 2. REMOVE RIDGE ON FWD SIDE
 3. LOCATE D3285-1 (TRIM AS NECESSARY)
 4. WELD D3285-1 IN PLACE PER DART QSI 004
 5. GRIND FLUSH
 6. RIVET D3415-041 NUT PLATE IN PLACE
- NOTE: MASK THREADS IN D3415-041
PRIOR TO FINISH

DEO ATTACHED

RELEASED
07.02.12

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| DESIGN | DRAWN BY | DART | DART AEROSPACE USA, INC. |
| CP | PH | PORT HADLOCK, MA | |
| CHECKED | APPROVED | DRAWING NO. | REV. D |
| # | # | D3274 | SHEET 4 OF 4 |
| DATE | TITLE | SCALE | |
| 06.12.19 | SKIDTUBE ASSEMBLY | 1:3 | |

| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
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Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

| NCR: | | WORK ORDER NON-CONFORMANCE (NCR) | | | | | | |
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| | | | Initial Chief Eng | Action Description Chief Eng | Sign & Date | | | |
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NOTE: Date & initial all entries

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|----------------------|-------------------------------|----------------------------------|--|--------------------------------|---------------------------|--------------|
| DRAWING NO. D3274 | TITLE SKIDTUBE ASSEMBLY | REV. D | DART AEROSPACE USA, INC ENGINEERING ORDER | D.E.O. NO. D3274-D-1 | SHEET NO. SHEET 1 OF 1 | SCALE NTS |
| DRAWN <i>UP</i> | CHECKED <i>[Signature]</i> | MFG. APPR. <i>[Signature]</i> | APPROVED <i>[Signature]</i> | DE APPR. <i>[Signature]</i> | | |
| DATE 09.06.17 | DATE 09.06.23 | DATE 09/06/23 | DATE 09/06/23 | DATE 09.06.23 | | |

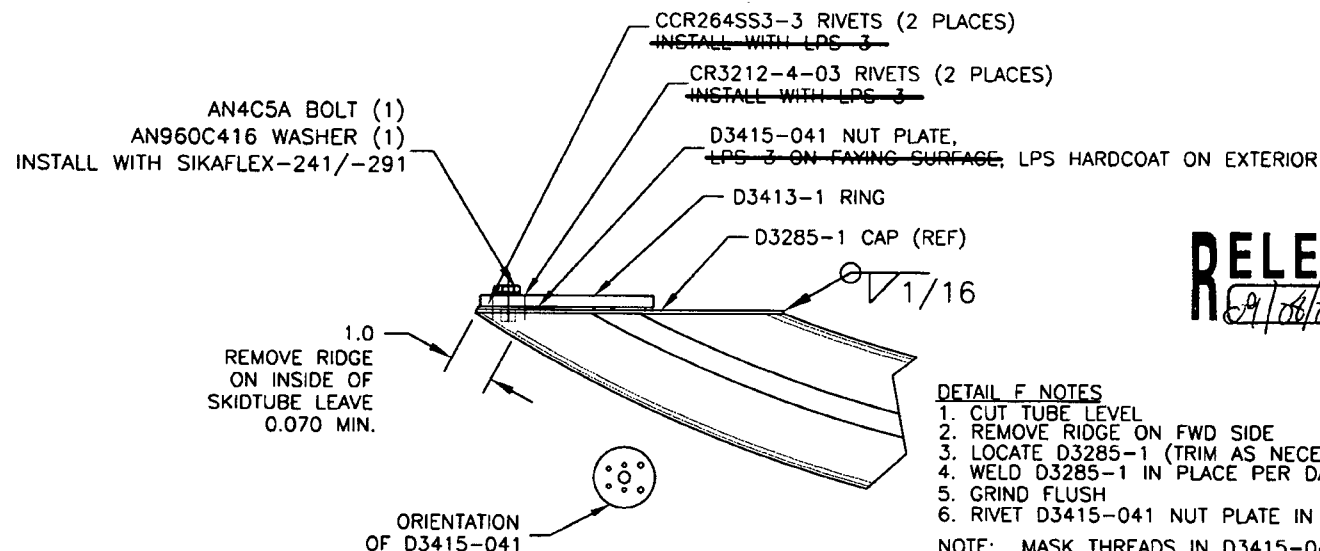
LPS-3 IS NO LONGER USED DURING ASSEMBLY OF SKIDTUBE.

AMEND NOTE 8: "~~SPRAY INSIDE OF TUBE WITH A COAT OF LPS LABORATORIES 'LPS-3' AFTER FINISH AND INSTALLATION OF INSERTS.~~
COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES 'LPS PROCYON' AFTER FINAL ASSEMBLY, CLEAN EXCESS OFF
POWDER COATING WITH MEK DEGREASER."

AMEND DETAIL F AS SHOWN:

6014L #

DETAIL F: END FINISHING DETAIL



DETAIL F NOTES

1. CUT TUBE LEVEL
2. REMOVE RIDGE ON FWD SIDE
3. LOCATE D3285-1 (TRIM AS NECESSARY)
4. WELD D3285-1 IN PLACE PER DART QSI 004
5. GRIND FLUSH
6. RIVET D3415-041 NUT PLATE IN PLACE

NOTE: MASK THREADS IN D3415-041
PRIOR TO FINISH

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Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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| | | | Initial Chief Eng | Action Description Chief Eng | Sign & Date | | | |
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NOTE: Date & initial all entries

NO. 267

AWS D17.1.2001
QUALIFICATION TEST RECORD

Name: Pat Ewers
Job number: 73212
Part number: A206-642-541
Description: Skid tube
Welding Process: Tig ☒ Mig ☒
Base material: Aluminum
Current: AC ☒ DC ☐

TEST REQUIREMENTS AND RESULTS

Visual: pass ☒ fail ☐
Penetration: pass ☒ fail ☐

UNACCEPTABLE

Cracks: pass ☒ fail ☐
Undercut: pass ☒ fail ☐
Pin holes: pass ☒ fail ☐
Overlap (cold lap): pass ☒ fail ☐
Porosity (surface): pass ☒ fail ☐
Coloration: pass ☒ fail ☐

Qualifier David Aual Date of Test Coupon 11.09.26
Welder Pat Ewers Date of Test Coupon 11.09.26

The above named individual is qualified in accordance with AWS D17.1.2001 to weld

| W/O: | | WORK ORDER CHANGES | | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|--|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector | |
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Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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NOTE: Date & initial all entries